



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/512,407	10/25/2004	Masahiro Oshikiri	L9289.04162	4624
24257 7590 12/08/2009 Dickinson Wright PLLC James E. Ledbetter, Esq. International Square 1875 Eye Street, NW., Suite 1200 WASHINGTON, DC 20006				
EXAMINER				
SHAH, PARAS D				
ART UNIT		PAPER NUMBER		
2626				
MAIL DATE		DELIVERY MODE		
12/08/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/512,407

**Applicant(s)**

OSHIKIRI, MASAHIRO

**Examiner**

PARAS SHAH

**Art Unit**

2626

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 43-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 43-54 is/are rejected.
- 7) ☒ Claim(s) 55 and 56 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This communication is in response to the Amendments and Arguments filed on 09/08/2009. Claims 43-56 are pending. The Applicants' amendment and remarks have been carefully considered, but they do not place the claims in condition for allowance. Accordingly, this action has been made FINAL.
2. All previous objections and rejections directed to the Applicant's disclosure and claims not discussed in this Office Action have been withdrawn by the Examiner.

### ***Response to Amendments and Arguments***

3. Applicant's arguments (pages 9-11) filed on 09/08/2009 with regard to claims 43-56 have been fully considered. The 35 USC 101 rejections with respect to claims 43-54 are maintained for the reasons mentioned below. The 35 USC 103 rejections have been withdrawn in view of the newly amended limitations, which indicate allowable subject matter.

With respect to the 35 USC 101 rejections of claim 1, the Applicant asserts that the newly amended limitations overcome the rejections from the previous action. The Examiner disagrees with this assertion. The Applicants in claims 43-54 primarily amended the claims to replace the "section" terminology with, for example, coder type language. However, even with the use of such terminology the claims are directed to software. As discussed in the prior Action, paragraphs [0395] describe a particular embodiment being implemented as software alone. The subsequent paragraphs present an embodiment where software and

hardware define structural and functional interrelationships between data and other claimed aspects of the invention, which permit the data structure's functionality to be realized. Hence, the Applicant's amendment is not persuasive.

### ***Specification***

4. The following title is suggested: A Scalable Coder and Decoder Performing Amplitude Flattening for Error Spectrum Estimation.

### ***Claim Objections***

5. Claims 43, 48, 55, and 56 are objected to because of the following informalities: "calculating the following equation" should be "calculating an equation" as the equation has not been introduced until the end of the claim. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 43-54 are rejected under 35 U.S.C. 101 because the claims appear to be directed to a software embodiment and not to a hardware embodiment, where a machine claim is directed towards a system, apparatus, or arrangement. The claim limitations, which are means plus function, appear to be directed towards a program as stated in the published application, paragraphs [0395]-[0397], where the signal processing method is contained in the form of a program. Since, all of the claimed

limitations (signal processing method referred to the claimed functions performed by the structures in the claim) are contained in the form of program stored in RAM or ROM, the claim is directed to software and not hardware since no storage of these instructions in a computer memory executed by a processor is being described. Further, the claim does not contain any limitation that would enable the claim not to be directed towards software. Thus, the claims are directed towards non-statutory subject matter. See MPEP 2106.01 [R-5]. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See e.g., *Warmerdam*, 33 F.3d at 1361, 31, USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between data and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable storage medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

#### ***Allowable Subject Matter***

8. Claim 55 and 56 are allowed.
9. Claims 43-54 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 101, set forth in this Office action.

10. The following is a statement of reasons for the indication of allowable subject matter: None of the cited references either alone or in combination thereof teach the equation for calculating an estimated error spectrum as claimed, deriving a frequency region based on the calculated error spectrum for which the second coder utilizes, where the equation is in the form of  $E'(m) = a \cdot P(m)^\gamma$ , where  $1 > a$ ,  $\gamma > 0$ .

The closest prior art of record Jin teaches a scalable coder comprising: a first coding section (see [0015], 1<sup>st</sup> encoder 241) that performs weighting on an input signal to mask a spectrum of quantization distortion by a spectral envelope of the input signal, and thereafter encodes the input signal and obtains first coding information (see [0020], acoustic sense weighting filter 42 is used for performing weighting in order to consider the masking property of humans. The acoustic weighting determined based on spectral weighting); a decoding section (see [0015], local decoder 251) that decodes the first coding information and obtains a decoded signal (see [0015]) (e.g. The local decoder decodes the signal from the encoder 241.); a subtracting section (see [0015], difference circuit 28) that obtains a residual error signal of the input signal and the decoded signal; and a second coding section (see [0015], 2<sup>nd</sup> encoder 242) that encodes the frequency region in the residual error signal specified by the specifying section, and obtains second coding information (see [0015], difference circuit 28) between said input signal and said decoded signal of which sampling rate is raised, and obtains second coding information (see [0015] and [0016]) (e.g. The values of the decoded signal for which the sampling rate was raised and the

input signal are the parameters. A difference is computed and the second coding information is obtained.). However, Jin does not specifically disclose the specifiator calculates an auditory masking threshold and generates an error spectrum from the equation as claimed.

Pan teaches a specifiator (see Figure 1, Hybrid Psychoacoustic Modeling and Quantizer Control Unit 132) that calculates an auditory masking threshold for a decoded spectrum that is obtained from the decoded signal (see Figure 1, output of low bit rate decoding unit 130, into 132), generates an error spectrum (see output of 110, into Time-Frequency analysis unit 114 and see Figure 1, output of 110, where the subtracted input and decoded signal is the attenuated estimated error spectrum and the predefined constants were interpreted to be 1, which yields the error signal in the frequency domain), compares the estimated error spectrum with the auditory masking threshold (see col. 6, lines 6-12, frequency coefficients are used indicating a spectrum of the signal and compared to masking thresholds), and specifies a frequency region in the estimated error spectrum showing an amplitude equal to or greater than the auditory masking threshold (see col. 6, lines 6-12, frequency coefficients are flagged for those that may be omitted from coding and see Figure 4). However, Pan does not teach the generation of the error spectrum by calculation the equation as claimed, where the parameters are  $1 > a$ ,  $\gamma \geq$ .

***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bruhn (Us 6,611,798) is cited to disclose spectral smoothing to enhance the perceptual nature of acoustic signals.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PARAS SHAH whose telephone number is (571)270-1650. The examiner can normally be reached on MON.-THURS. 7:30a.m.-4:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571)272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R Hudspeth/  
Supervisory Patent Examiner, Art Unit 2626

/Paras Shah/  
Examiner, Art Unit 2626

11/25/2009